A national strategy for management of the Service's scientific data

Data Management Subcommittee of the Science Committee

Emily Silverman 19 June 2014

USFWS Science Committee

Created to help promote science excellence in the Service.

Members are not programmatic or Regional representatives, but serve as individual scientists.

- Science Awards
- FWS Journals & Publishing disclaimer
- Procedures for permission to serve on Boards
- Scientific integrity and ethics
- Science capacity

Spring 2012

Science Committee forms *ad hoc* Subcommittee to address recurring data management-related issues

The Science Committee's *ad hoc* Subcommittee on Data Management developed a Vision, a Strategy, and set of recommended Actions.

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Western Alaska LCC

Migratory Birds

R5 NWRS I&M

Great Northern LCC

R8 OSA

R8 NWRS I&M

IRTM Data & Systems Services

R6 NWRS I&M

Div. Cost & Perf. Management

Ecological Services, ECOS Program

Special thanks to Jen Jones (NCTC)

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August 2013

OSA briefs Directorate on Data Management problems and work of Subcommittee



DIRECTORATE REQUESTS A PROPOSAL WITH RECOMMENDED INITIAL ACTIONS

Fall-winter 2013-14

Subcommittee drafts Strategy for managing FWS scientific data

Vision

Scientific data are 'trust resources' and the foundation of our future conservation actions

Key Aspects of the Problem

Long-term data curation Project-level data stewardship

Occurs at the *source* of data collection Requires understanding of data *content*

Regional/National scale
Best point of access for OPEN DATA
IT infrastructure is critical

PLAN

Define objectives
Acquire skills/personnel
Draft Data Management Plan
Structure data files
Write data collection methods
Initiate metadata files
Envision/describe products

QA/QC

ARCHIVE & CURATE

Review publication and clearinghouse status Safeguard all formats (Paper, Digital) Write data to long-term storage Make Discoverable, Accessible

ACQUIRE

Gather pre-existing data
Purchase data (if necessary)
Prepare and test data collection
devices
Collect data
Convert/transform data
Backup data files
Process data
Edit metadata files

USE & EVALUATE

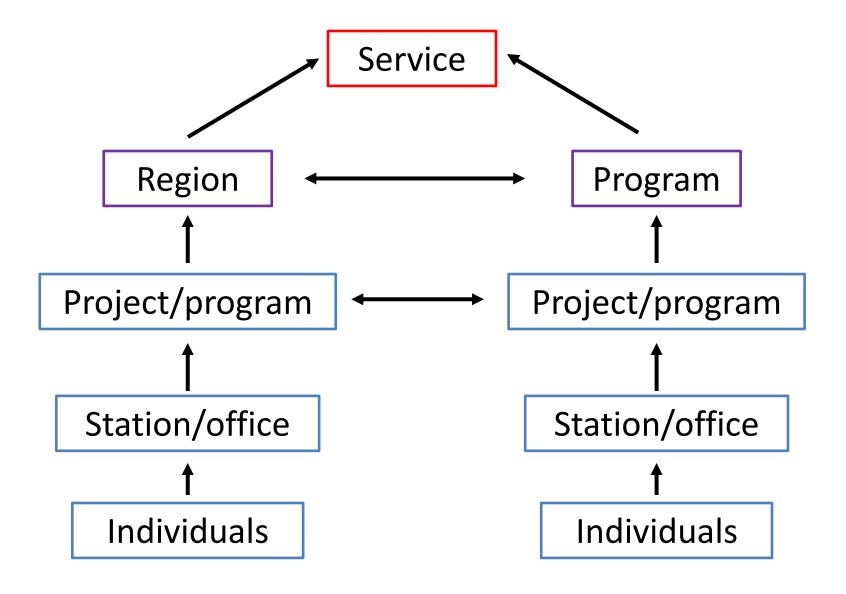
Data analysis & reporting Decision support Assess gaps Review QA/QC methods Track data access and use

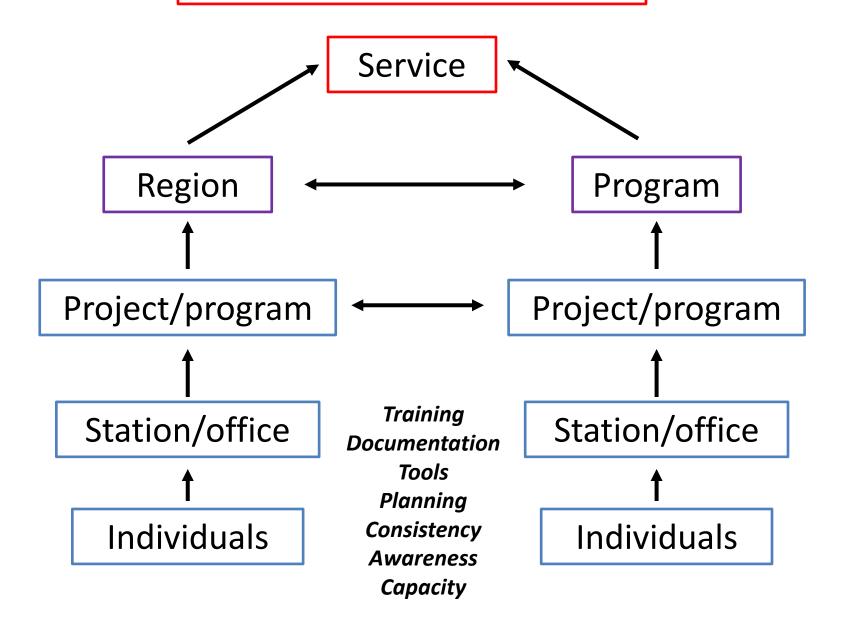
MAINTAIN

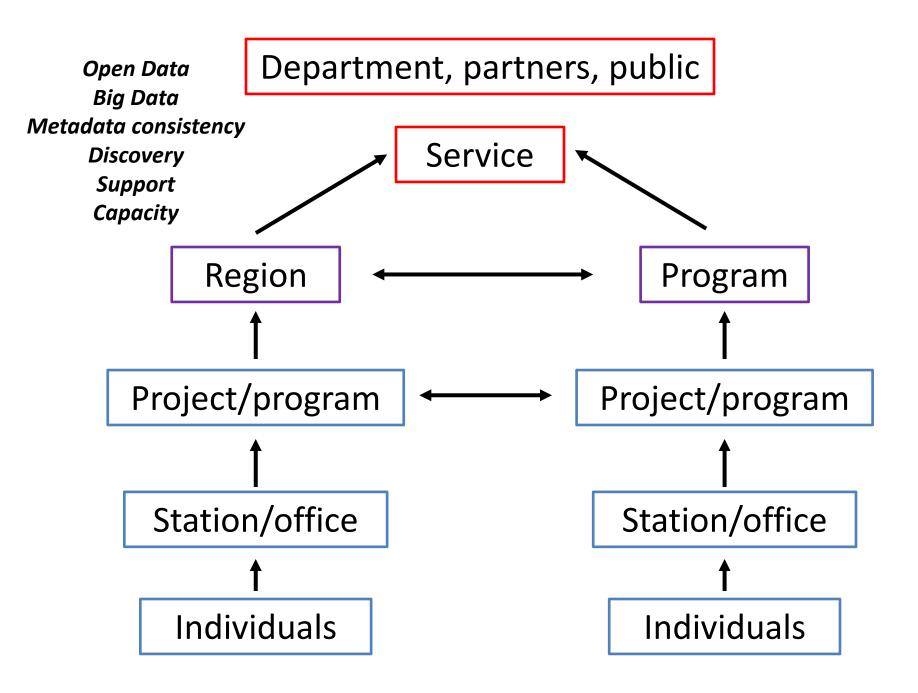
Fulfill records requirements and standards Maintain retention schedule Publish availability Update data as needed Edit metadata files

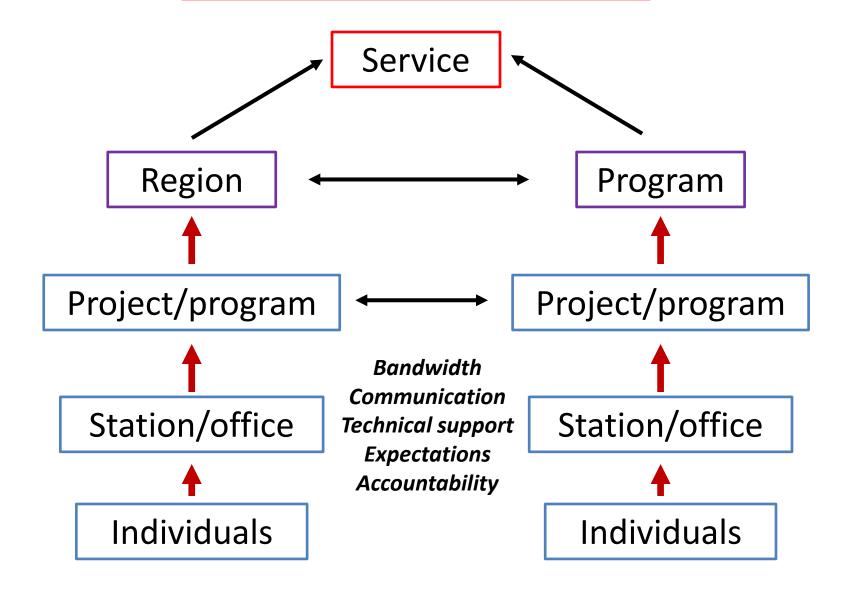
Access

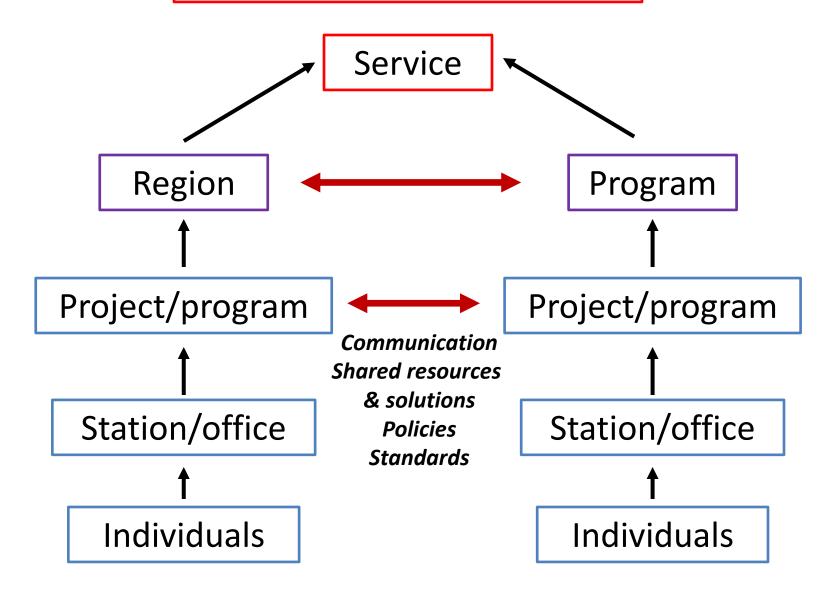
Evaluate data security process
Assess backup schedule and process
Define access rights
Final edit metadata
Publish data
Deliver data to clearinghouse

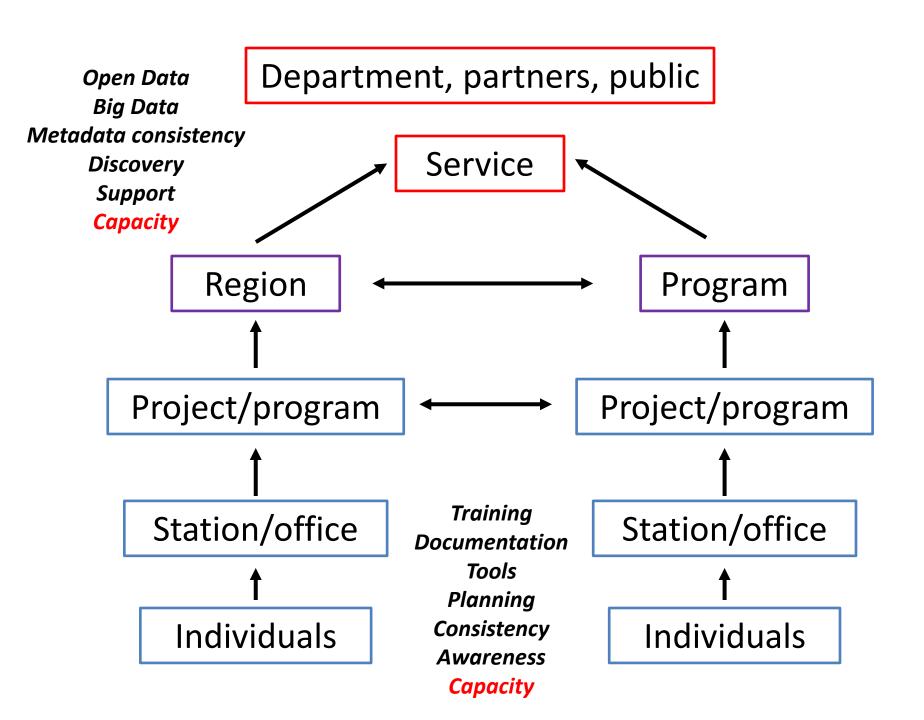


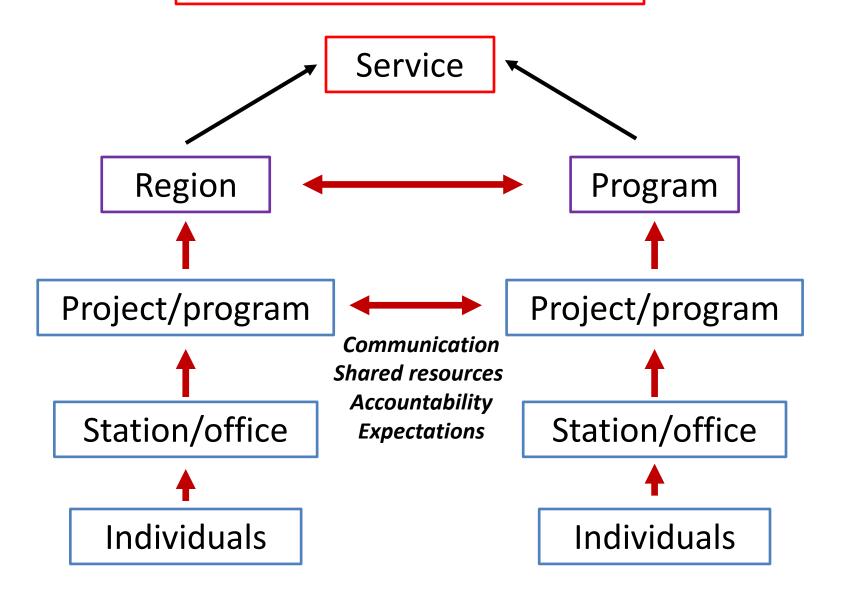












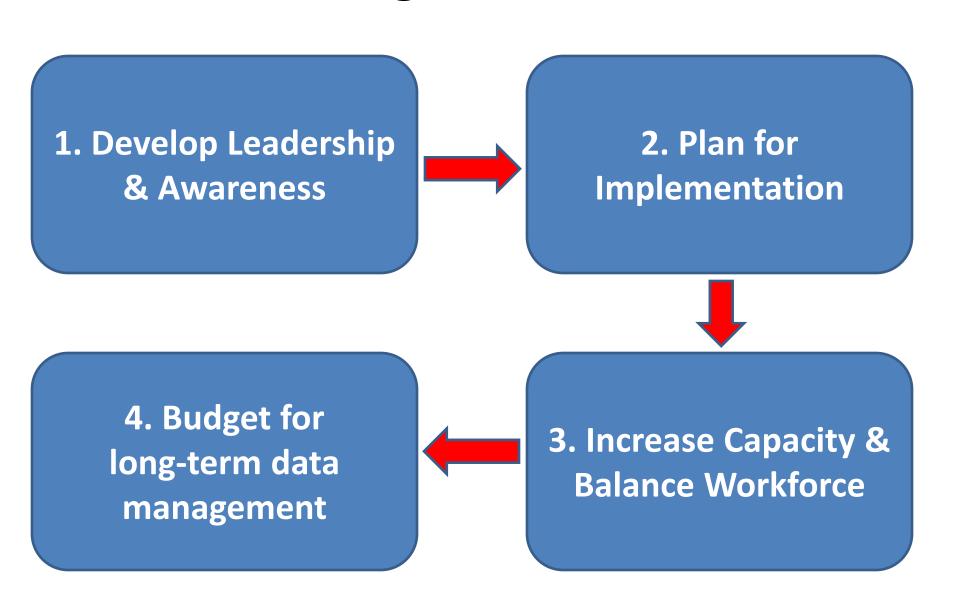
There are **Cultural**, **Organizational**, and **Resource** challenges to overcome.

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Any solution must have 4 characteristics:

- Meet distinct project-level, Regional, and National needs;
- 2. Connect local, Regional, and national systems;
- Coordinate between and within Regions and Programs;
- 4. Recognize that the transformation will take time and requires a phased approach.

Strategic Directions



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April 2014

Presentation to Directorate of key strategy messages and recommended initial actions

Develop leadership: Create home & voice for data science

National **Data Science Advisor**

Service-wide standing **Data Science Committee**

A Community of Practice with participation by early adopting **Data**Science champions

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Communication
Collaboration
Accountability

A language and culture focused on data value

Develop leadership: Create home & voice for data science

National **Data Science Advisor**

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A Community of Practice with participation by early adopting **Data**Science champions

Action 2

Plan nationally: Contract a comprehensive evaluation of the Service's data management practices & needs

Develop leadership: Create home & voice for data science

National Data Science Advisor

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Action 2

Plan nationally: Contract a comprehensive evaluation of the Service's data management practices & needs

Where are the current data science resources?

How much money do we spend?

What are measurable improvements?

What can we share? Where do we invest first?

Develop leadership: Create home & voice for data science

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Action 2

Plan nationally: Contract a comprehensive evaluation of the Service's data management practices & needs

Action 3

Increase local capacity: Initiate a 3-yr term award to develop local project-level capacity

How could this effort benefit the GIS community?

- magnify your voice re: needs, e.g. improved standardization
- promote your solutions
- develop relevant policies, e.g. Open Data implementation
- improve availability of Service data
- increase cross-Service technical & science capacity
- improve data literacy & training across workforce
- improve communication between IT and science activities.

What's next?

The Strategy provides a vision and broad set of goals. (WHAT)

Initial actions aim to create a mechanism for implementation.

(WHO)

Need:

Promotion of the strategy's principles: cultural + organizational change and increased resources for data science.

Engagement with implementation planning. (HOW)

Decision Document for Directorate

Request that Directorate creates a

Data Science Committee

This committee will be charged with developing

- a position description for a Data Science Advisor, and
- a process for a detailed data management evaluation.

It will

- continue the work of ad hoc Data Management Advisory Committee, and
- implement the rest of Strategy recommendations.